Claims:

1. (original) A method for monitoring optical signal quality between land-based terminal equipment and an undersea optical transmission path, said method comprising the steps of:

receiving an analog optical signal in which information is embodied in digital form from either of the terminal equipment or the undersea optical transmission path; and

measuring a parameter reflecting signal quality by analysis of the analog optical signal and not the information digitally embodied therein.

2. (original) The method of claim 1 wherein said parameter is a Q-factor.

3. (original) The method of claim 1 wherein said parameter comprises a signal spectrum.

4. (original) A method for providing optical-level connectivity between land-based terminal equipment and an undersea optical transmission path, said method comprising the steps of:

receiving an analog optical signal in which information is embodied in digital form from the terminal equipment;

measuring a parameter reflecting signal quality by analysis of the analog optical signal and not the information digitally embodied therein;

performing at least one optical-level signal process on the analog optical signal; and

directing said analog optical signal onto the undersea optical transmission path.

5. (original) The method of claim 4 wherein said optical-level signal process is selected from the group consisting of gain equalization, bulk dispersion compensation, optical gain, Raman amplification, dispersion slope compensation., PMD compensation, and dummy channel insertion.

6. (original) The method of claim 4 wherein said parameter is a Q-factor.

7. (original) The method of claim 4 wherein said parameter comprises a signal spectrum.

8. (original) The method of claim 4 further comprising the step of supplying Raman amplification to the analog optical signal.

9. (original) The method of claim 4 further comprising the step of monitoring a status of the undersea optical transmission path.

10. (original) The method of claim 4 wherein said monitoring step is performed with a COTDR.

11. (original) The method of claim 9 wherein said monitoring step employs an autocorrelation technique.

12. (original) An optical interface device for providing optical-level connectivity between land-based terminal equipment and an undersea optical transmission path, comprising:

means for receiving an analog optical signal in which information is embodied in digital form from the terminal equipment;

means for measuring a parameter reflecting signal quality by analysis of the analog optical signal and not the information digitally embodied therein;

means for performing at least one optical-level signal process on the analog optical signal; and

means for directing said analog optical signal onto the undersea optical transmission path.

13. (original) The optical interface device of claim 4 wherein said optical-level signal process is selected from the group consisting of gain equalization, bulk dispersion compensation,

optical gain, Raman amplification, dispersion slope compensation., PMD compensation, and dummy channel insertion.

14. (original) The optical interface device of claim 12 wherein said parameter is a Q-factor.

15. (original) The optical interface device of claim 12 wherein said parameter comprises a signal spectrum.

16. (original) The optical interface device of claim 12 further comprising means for supplying Raman amplification to the analog optical signal.

17. (original) The optical interface device of claim 12 further comprising means for monitoring a status of the undersea optical transmission path.

18. (original) The optical interface device of claim 17 wherein said monitoring means comprises a COTDR.

19. (original) The optical interface device of claim 17 wherein said monitoring means comprises an autocorrelation arrangement.